



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,674	05/26/2006	Ronaldus Maria Aarts	NL 031375	5426
24737 7590 11/27/2007 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			EXAMINER MONIKANG, GEORGE C	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/580,674

Applicant(s)

AARTS ET AL.

Examiner

George C. Monikang

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/580,674.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 6-8, 12 & 16 are rejected under 35 U.S.C. 102(b) as being anticipated by De Poortere et al, US Patent 6,134,330.
3. Re Claim 1, De Poortere et al discloses a method of enhancing an audio signal (col. 4, lines 9-29), the method comprising the steps of: detecting tonal signal components in a frequency range of the audio signal (col. 4, lines 9-29), producing enhancement signals (col. 4, lines 9-29), and adjusting the level of the enhancement signals in dependence of any detected tonal signal components in said frequency range (col. 4, lines 9-29).
4. Re Claim 2, De Poortere et al discloses the method according to claim 1, wherein the enhancement signals are harmonics or sub-harmonics of part of the audio signal (col. 4, lines 9-29).
5. Re Claim 3, De Poortere et al discloses the method according to claim 1, wherein the frequency range comprises bass frequencies (col. 4, lines 9-29).
6. Claim 6 has been analyzed and rejected according to claim 1.
7. Claim 7 has been analyzed and rejected according to claim 2.
8. Claim 8 has been analyzed and rejected according to claim 3.

9. Re Claim 12, De Poortere et al discloses the device according to claim 6, further comprising a first filter (8) for filtering the audio input signal prior to enhancement (fig. 2: FM21), a second filter (9) for passing signals not passed by the first filter (fig. 2: FM22), and adding means (7) for adding the enhancement signals and the signals passed by the second filter (9) (fig. 2: AM2).
10. Claim 16 has been analyzed and rejected according to claim 6.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 4-5, 9, 11, 13 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Poortere et al, US Patent 6,134,330, in view of Hershberger, US Patent 6,711,214 B1, and further in view of Yoneda, US Patent 7,286,946 B2.

14. Re Claim 4, De Poortere et al discloses the method according to, wherein the step of detecting tonal frequency components (col. 4, lines 9-29), but fails to disclose comprising the sub-steps of: generating a sine signal and a cosine signal (Hershberger, fig. 10: sine & cosine), multiplying both the sine signal and the cosine signal by a signal (Hershberger, fig. 10: 140 & 142), filtering the respective multiplied signals (Hershberger, fig. 10: 146 & 148). De Poortere et al and Hershberger fail to disclose determining an average of the signals so as to produce a detection signal. However, Yoneda does (Yoneda, col. 9, lines 5-20).

15. Taking the combined teachings of De Poortere et al, Hershberger and Yoneda as a whole, one skilled in the art would have found it obvious to modify the method wherein the step of detecting tonal frequency components (col. 4, lines 9-29) of De Poortere et al with comprising the sub-steps of: generating a sine signal and a cosine signal (Hershberger, fig. 10: sine & cosine), multiplying both the sine signal and the cosine signal by a signal (Hershberger, fig. 10: 140 & 142), filtering the respective multiplied signals (Hershberger, fig. 10: 146 & 148) as taught in Hershberger with determining an average of the signals so as to produce a detection signal as taught in Yoneda (Yoneda, col. 9, lines 5-20) to compensate for various sound tones and enhance the overall sound quality.

16. Re Claim 5, the combined teachings of the method according to claim 4, wherein the sine and cosine signals both have a frequency which is substantially equal to a dominant frequency of the frequency range (Hershberger, abstract).

17. Claim 9 has been analyzed and rejected according to claim 4.

18. Re Claim 11, the combined teachings of De Poortere et al, Hershberger and Yoneda disclose the device according to claim 9, further comprising frequency tracking means (39) for tracking the frequency in the frequency range and controlling the generator means (31, 32) (De Poortere et al, col. 4, lines 9-29).

19. Claim 13 has been analyzed and rejected according to claim 4.

20. Claim 15 has been analyzed and rejected according to claim 11.

21. Claims 10 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Poortere et al, US Patent 6,134,330, Hershberger, US Patent 6,711,214 B1, Yoneda, US Patent 7,286,946 B2, as applied to claim 9, and further in view of Paksoy et al, US Patent 7,260,523 B2.

22. Re Claim 10, the combined teachings of De Poortere et al, Hershberger and Yoneda discloses the device according to claim 9, but fail to disclose further comprising scaling means (38) for scaling the detector signal. However, Paksoy et al odes (col. 3, lines 16-25).

23. Taking the combined teachings of De Poortere et al, Hershberger, Yoneda and Paksoy et al as a whole, one skilled in the art would have found it obvious to modify the device according to De Poortere et al, hershberger, Yoneda and Paksoy et al with further comprising scaling means (38) for scaling the detector signal as taught in Paksoy et al (col. 3, lines 16-25) to minimize errors.

24. Claim 14 has been analyzed and rejected according to claim 10.

**Contact**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Monikang whose telephone number is 571-270-1190. The examiner can normally be reached on M-F. alt Fri. Off 7:30am-5:00pm (est).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

George Monikang

11/21/2007

  
**VIVIAN CHIN**  
**SUPERVISOR PATENT EXAMINER**  
**TECHNOLOGY CENTER 2220**